Section 3. Radar Identification

5-3-1. APPLICATION

Before you provide radar service, establish and maintain radar identification of the aircraft involved, except as provided in para 5-5-1, Application, subparas b2 and 3.

REFERENCE-
FAAO 7110.65, Use of Tower Radar Displays, Para 3-1-9.

5-3-2. PRIMARY RADAR IDENTIFICATION METHODS

Identify a primary or radar beacon target by using one of the following methods:

a. Observing a departing aircraft target within 1 mile of the takeoff runway end at airports with an operating control tower, provided one of the following methods of coordination is accomplished.

1. A verbal rolling/boundary notification is issued for each departure, or

2. A nonverbal rolling/boundary notification is used for each departure aircraft.

NOTE-
Nonverbal notification can be accomplished via the use of a manual or electronic "drop tube" or automation.

b. Observing a target whose position with respect to a fix (displayed on the video map, scribed on the map overlay, or displayed as a permanent echo) or a visual reporting point (whose range and azimuth from the radar antenna has been accurately determined and made available to the controller) corresponds with a direct position report received from an aircraft, and the observed track is consistent with the reported heading or route of flight. If a TACAN/VORTAC is located within 6,000 feet of the radar antenna, the TACAN/VORTAC may be used as a reference fix for radar identification without being displayed on the video map or map overlay.

NOTE-
1. Establishment of radar identification through use of DME position information can be complicated by the fact that some military TACAN's are not collocated with frequency-paired VOR's and might be separated from them by as much as 31 miles.

2. Visual reporting points used for RADAR identification are limited to those most used by pilots and whose range and azimuth have been determined by supervisory personnel.

c. Observing a target make an identifying turn or turns of 30 degrees or more, provided the following conditions are met:

NOTE-
Use of identifying turns or headings which would cause the aircraft to follow normal IFR routes or known VFR flight paths might result in misidentification. When these circumstances cannot be avoided, additional methods of identification may be necessary.

1. Except in the case of a lost aircraft, a pilot position report is received which assures you that the aircraft is within radar coverage and within the area being displayed.

2. Only one aircraft is observed making these turns.

3. For aircraft operating in accordance with an IFR clearance, you either issue a heading away from an area which will require an increased minimum IFR altitude or have the aircraft climb to the highest minimum altitude in your area of jurisdiction before you issue a heading.

REFERENCE-
FAAO 7110.65, Use of Tower Radar Displays, Para 3-1-9.
FAAO 7110.65, Surveillance Unusable, Para 5-12-10.

5-3-3. BEACON IDENTIFICATION METHODS

When using only Mode 3/A radar beacon to identify a target, use one of the following methods:

a. Request the aircraft to activate the "IDENT" feature of the transponder and then observe the identification display.

NOTE-
1. At facilities where the single-slash "IDENT" modification is installed or other decoder modifications have been made which increase the number of "blooming" target displays, it will be necessary to exercise additional care to preclude the possibility of misidentification.

2. TERMINAL. When automated displays are operated in the analog mode, the "IDENT" return is displayed as a double slash and the emergency return as a single bloomer whenever the beacon control head is in the "fail" position.

PHRASEOLOGY-
IDENT.
SQUAWK (code) AND IDENT.

b. Request the aircraft to change to a specific discrete or nondiscrete code, as appropriate, and then observe the target or code display change. If a code

change is required in accordance with Section 2, Beacon Systems, of this chapter, use the codes specified therein.

c. Request the aircraft to change transponder to "standby." After you observe the target disappear for sufficient scans to assure that loss of target resulted from placing the transponder in "standby" position, request the aircraft to return transponder to normal operation and then observe the reappearance of the target.

PHRASEOLOGY-
SQUAWK STANDBY,

then

SQUAWK NORMAL.

d. *EN ROUTE.* During narrowband operations, an aircraft may be considered identified when the full data block is automatically associated with the beacon target symbol of an aircraft that is squawking a discrete code assigned by the computer.

PHRASEOLOGY-
SQUAWK (4 digit discrete code), AND IF YOUR ALTITUDE REPORTING EQUIPMENT IS TURNED OFF, SQUAWK ALTITUDE.

NOTE-
The AIM informs pilots to adjust Mode C transponders with altitude reporting capability activated unless deactivation is requested by ATC. Squawk altitude is included to provide applicable phraseology.

REFERENCE-
FAAO 7110.65, Use of Tower Radar Displays, Para 3-1-9.
FAAO 7110.65, Position Information, Para 5-3-6.

5-3-4. TERMINAL AUTOMATION SYSTEMS IDENTIFICATION METHODS

TERMINAL

a. Consider an auto-acquired aircraft as identified when the data block is displayed and is visible to you, and one of the following conditions exist:

1. The radar or beacon identification procedures have been used to confirm the identity of the tagged target.

2. The aircraft is being handed off using a NAS automated system and one of the following does not appear in the data block: "CST", "NAT", "NT", "AMB", "OLD", "NB", "TU", "AM", or "OL".

b. Use the data block to maintain target identity unless it is in a coast status or displaced from the appropriate target.

c. A displaced data block shall be updated at all times.

REFERENCE-
FAAO 7110.65, Use of Tower Radar Displays, Para 3-1-9.

5-3-5. QUESTIONABLE IDENTIFICATION

a. Use more than one method of identification when proximity of targets, duplication of observed action, or any other circumstances cause doubt as to target identification.

b. If identification is questionable for any reason, take immediate action to reidentify the aircraft or terminate radar service.

REFERENCE-
FAAO 7110.65, Methods, Para 5-4-3.

5-3-6. POSITION INFORMATION

Inform an aircraft of its position whenever radar identification is established by means of identifying turns or by any of the beacon identification methods outlined in para 5-3-3, Beacon Identification Methods. Position information need not be given when identification is established by position correlation or when a departing aircraft is identified within 1 mile of the takeoff runway end.

5-3-7. IDENTIFICATION STATUS

a. Inform an aircraft of radar contact when:

1. Initial radar identification in the ATC system is established.

2. Subsequent to loss of radar contact or terminating radar service, radar identification is reestablished.

PHRASEOLOGY-
RADAR CONTACT (position if required).

b. Inform an aircraft when radar contact is lost.

PHRASEOLOGY-
RADAR CONTACT LOST (alternative instructions when required).

5-3-8. TARGET MARKERS

EN ROUTE

a. Use radar target markers (shrimp boats) on horizontal scopes to provide continuous target identity. Post flight identification and altitude when constant, on

markers. Post miscellaneous items (abbreviated route, vector headings, arrows to indicate climb and descent, etc.) at your discretion. To prevent misinterpretation, use standard hand printed characters.

b. Automated Systems. Retain data blocks that are associated with the appropriate target symbol in order to maintain continuous identity of aircraft. Retain the data block until the aircraft has exited the sector or delegated airspace, and all potential conflicts have been resolved; including an aircraft that is a point out. The data block shall display flight identification and altitude information, as a minimum. The displayed altitude may be assigned, interim, or reported, whichever is appropriate.

5-3-9. TARGET MARKERS

TERMINAL

Automated Systems. Retain data blocks that are associated with the appropriate target symbol in order to maintain continuous identity of aircraft. Retain the data block until the aircraft has exited the sector or delegated airspace, and all potential conflicts have been resolved; including an aircraft that is a point out. The data block shall display flight identification and altitude information, as a minimum.

NOTE-

Where delegated airspace extends beyond Class B and/or Class C airspace, the following will apply: If a VFR aircraft is clear of Class B and Class C airspace and radar services have been terminated then retention of the data block is no longer required.